

WHAT IS CLAIMED IS:

1. A method for the assembly of a thin film comprising the steps of:
  - (a) applying a substrate to a support surface;
  - (b) forming a thin film upon said substrate by the substeps of:
    - (i) immersing said substrate in a first aqueous solution or dispersion of a first substance, said first substance having an affinity for said substrate;
    - (ii) rinsing said substrate with neat solvent;
    - (iii) immersing said substrate in a second solution or dispersion of a second substance, said second substance having an affinity for said first substance; and
    - (iv) rinsing said substrate with neat solvent;
  - (d) removing said substrate together with said thin film from said support; and
  - (e) separating said substrate from said thin film.
2. The method of claim 1 further including the additional step of:
  - (b)(v) repeating steps (b)(i) through (b)(iv) a predetermined number of times.
3. The method of claim 2 further comprising for at least one repetition of step (b)(i), replacing the solution or dispersion of said first substance with a solution or dispersion of a third substance, said third substance having an affinity similar to said first substance.
4. The method of claim 3 wherein for at least one repetition of step (b)(i), said solution or dispersion of a substance is of a biological compound.

1 5. The method of claim 2 further comprising for at least one repetition of step (b)(iii),  
2 replacing the solution or dispersion of said second substance with a solution or dispersion  
3 of a third substance, said third substance having an affinity similar to said second  
4 substance.

1 6. The method of claim 5 wherein for at least one repetition of step (c)(iii), said solution or  
2 dispersion of a substance is of a biological compound.

3 7. The method of claim 2 further comprising substituting for at least one repetition of step  
4 (c)(i) or (c)(iii), a solution or dispersion of a structural stabilizing material.

1 8. A thin film constructed according to the method of claim 1.